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(54) Title: CONFIGURABLE MEMORY PARTITIONING IN HARDWARE

(57) Abstract: A buffer management system (100) partitions a total memory space (200) into a programmable number of substantially uniform size buffers (220-223). An application communicates the desired number of buffers to the buffer management system (200), then allocates these buffers among the data-transfer paths used by the application. Optionally, multiple uniform-size buffers can be merged to form a single logical buffer. By effecting the partitioning of the total memory space (200) into uniform-size buffers (220-223), the overhead required to manage the multiple buffers is minimized. By providing a selected number of managed buffers to an application, the application is able to allocate buffers as required, without having to be concerned with the details of buffer management.

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International Application No.

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 226 338 B1 (EARNEST TIMOTHY J) 1 May 2001 (2001-05-01) column 1, line 6 - line 10 column 2, line 1 - line 16 column 3, line 9 - line 23 column 4, line 33 - line 49 column 6, line 15 - line 34 column 6, line 59 - column 7, line 64	1-16
X	US 5 809 557 A (SHEMLA DAVID ET AL) 15 September 1998 (1998-09-15) column 1, line 25 - line 64 column 2, line 45 - column 3, line 51	1-16
X	EP 0 853 283 A (HEWLETT PACKARD CO) 15 July 1998 (1998-07-15) page 2, line 52 - line 56 page 3, line 16 - line 35	1-16
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☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 041 397 A (CHAU VI ET AL) 21 March 2000 (2000-03-21) column 1, line 1 - line 43	1-16
Y	US 2002/129196 A1 (VOLK ANDREW M ET AL) 12 September 2002 (2002-09-12) paragraph '0030!	1-16
A	EP 0 866 406 A (INST OF COMPUTER SCIENCE FORTH) 23 September 1998 (1998-09-23) column 2, line 28 - column 5, line 19	1-16
A	EP 0 545 575 A (AMERICAN TELEPHONE & TELEGRAPH) 9 June 1993 (1993-06-09) abstract	1-16

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 03/05797

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6226338	B1	01-05-2001	NONE	
US 5809557	A	15-09-1998	IL 116984 A	26-07-2000
EP 0853283	A	15-07-1998	EP 0853283 A1	15-07-1998
			DE 69727465 D1	11-03-2004
			EP 0862118 A1	02-09-1998
			JP 10232826 A	02-09-1998
			US 6321310 B1	20-11-2001
			US 6336154 B1	01-01-2002
US 6041397	A	21-03-2000	US 5860149 A	12-01-1999
			AU 6169296 A	30-12-1996
			CA 2223890 A1	19-12-1996
			EP 0832457 A1	01-04-1998
			JP 11507749 T	06-07-1999
			WO 9641266 A1	19-12-1996
US 2002129196	A1	12-09-2002	AU 3095901 A	03-10-2001
			TW 518508 B	21-01-2003
			WO 0171482 A1	27-09-2001
EP 0866406	A	23-09-1998	EP 0866406 A1	23-09-1998
EP 0545575	A	09-06-1993	US 5426639 A	20-06-1995
			AU 642830 B2	28-10-1993
			AU 2856292 A	03-06-1993
			CA 2079503 A1	30-05-1993
			EP 0545575 A1	09-06-1993
			JP 6085842 A	25-03-1994